

SEQUENCE LISTING

<110> Gottesman, Susan
 Storz, Gisela
 Repoila, Francis
 Wassarman, Karen
 Rosenow, Carsten

<120> IDENTIFICATION OF NEW SMALL RNAs AND
 ORFs OF E. COLI AS MEDIATORS OF CELL AND INTERCELL REGULATION

<130> NIH210.001C1

<150> PCT/US02/03147

<151> 2002-01-31

<150> US 60/266402

<151> 2001-02-01

<160> 161

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 93

<212> DNA

<213> E. Coli

<400> 1

gccccttcaa gagctaagcc actgagagtg ccggagataa gcgccggatg gggtagaaac 60
 ccttaagcct gtgtcgca gacttaagg ttt 93

<210> 2

<211> 86

<212> DNA

<213> E. Coli

<400> 2

tcgctgaaaa acataaccca taaaatgcta gctgtaccag gaaccacctc cttagcctgt 60
 gtaatctccc ttacacgggc ttattt 86

<210> 3

<211> 307

<212> DNA

<213> E. Coli

<400> 3

actgcggccc tttccgccgt ctgcgaaaac gccgctggct ttaggaaagg atgttccgtg 60
 ccgtaaatgc aggtgtttca cagcgcttgc tatcgcgga atatcgccag tgggtgctgtc 120
 gtgatgcggt cttcgcatgg accgcacaat gaagatacgg tgcttttgta tcgtacttat 180
 tgtttctggt gcgctgttaa ccgaggtaaa taataaccgg agtctctccg gcgacaattt 240
 actggtggtt aacaaccttc agagcagcaa gtaagcccga atgccgccct ttgggcggca 300
 tatttta 307

<210> 4

<211> 65

<212> DNA

<213> E. Coli

<400> 4

acggcgcgagc caagatttcc ctggtgttgg cgcagttatc gcgcaccccg gtctagccgg 60
ggtca 65

<210> 5

<211> 92

<212> DNA

<213> E. Coli

<400> 5

cgcgatcagg aagaccctcg cggagaacct gaaagcacga cattgctcac attgcttcca 60
gtattactta gccagccggg tgctggcttt tt 92

<210> 6

<211> 211

<212> DNA

<213> E. Coli

<400> 6

aacgagtaga tgctcattcc atctcttatg ttgccttag tgcctcataa actccggaat 60
gacgcagagc cgtttacggt gcttatcgtc cactgacaga tgctcgcttat gcctcatcag 120
acaccatgga cacaacggtg agtgaagcac ccacttggtg tcatacagac ctgttttaac 180
gcctgctccg taataagagc aggcgttttt t 211

<210> 7

<211> 141

<212> DNA

<213> E. Coli

<400> 7

catcaacacc aaccggaacc tccaccacgt gtcggaatga ggtgtgttga cgtcggggga 60
aaccctctcg tgtaccagcg ggatagagag aaagacaaag accggaaaac aaactaaagc 120
gcccttgttg cgctttagtt t 141

<210> 8

<211> 79

<212> DNA

<213> E. Coli

<400> 8

tgccactgct tttctttgat gtccccattt tgtggagccc atcaaccccg ccatttcggt 60
tcaaggtga tgggttttt 79

<210> 9

<211> 272

<212> DNA

<213> E. Coli

<400> 9

tgtttaaagc aaaggcgtaa agtagcacco atagagcgag gacgctaaca ggaacaatga 60
ctcaggatga gggtcaggag cgccaggagg cgaagacaga ggattgtcag gaagacaaac 120
gtccggagac gtaattaaac ggaaatggaa tcaacacgga ttgttcccta aaggaaaaac 180
agggtgtgtt ggcggcctgc aaggattgta agaccggtta agggttatga gtcaggaaaa 240
aaggcgacag agtaatctgt cgcctttttt ct 272

<210> 10

<211> 195
 <212> DNA
 <213> E. Coli

<400> 10
 acattgtaaa ccagagttgc gaaggtacaa aaaattaacg ttttagcaat agctatataa 60
 tatagcctgt gctatatctg tatgtaatgc aatcatccct caaggatcga cgggattagc 120
 aagtcaggag gtcttatgaa tgagttcaag aggtgtatgc gcgtgtttag tcattctccc 180
 tttaaagtac ggtta 195

<210> 11
 <211> 82
 <212> DNA
 <213> E. Coli

<400> 11
 atcccagagg tattgatagg tgaagtcaac ttcgggttga gcacatgaat tacaccagcc 60
 tgcgcagatg cgcaggtttt tt 82

<210> 12
 <211> 92
 <212> DNA
 <213> E. Coli

<400> 12
 atcccagagg tattgattgg tgagattatt cggtacgctc ttttcgtacc ctgtctcttg 60
 caccaacctg cgcggatgcg caggtttttt tt 92

<210> 13
 <211> 278
 <212> DNA
 <213> E. Coli

<400> 13
 actataaagt cagcgaagga aatgcttctg gctttttaaca gataaaaaga gaccgaacac 60
 gattcctgta ttcgggtccag ggaaatggct cttgggagag agccgtgctc taaaagttgg 120
 cattaatgca ggcttagttg ccttgccctt taagaataga tgacgacgcc aggttttcca 180
 gtttgctgctc aaaatggtca ataaaaagcg tgggtggtcat cagctgaaat gttaaaaaac 240
 gcccgttctg gtgaaagaac tgaggcgggt tttttatt 278

<210> 14
 <211> 105
 <212> DNA
 <213> E. Coli

<400> 14
 agggcaaggc aactaagcct gcattaatgc caacttttag cgcacggctc tctcccaaga 60
 gccatttccc tggaccgaat acaggaatcg tgttcgggtc ctttt 105

<210> 15
 <211> 144
 <212> DNA
 <213> E. Coli

<400> 15
 agtgagggtt agggagaggt ttccccctcc ccctgggtgtt cttagtaagc ctggaagcta 60
 atcactaaga gtatcaccag tatgatgacg tgcttcatca taaccctttc cttattaaaa 120
 gccctcttct ccgggagagg cttt 144

<210> 16
 <211> 137
 <212> DNA
 <213> E. Coli

<400> 16
 agtgagggta gagcggggtt tccccgccc tggtagtctt agtaagcggg gaagcttatg 60
 actaagagca ccacgatgat gagtagcttc atcatgacct tttccttatt tatggcccct 120
 tctcgggag gggcttt 137

<210> 17
 <211> 112
 <212> DNA
 <213> E. Coli

<400> 17
 aggaacaagg gtaagggagg atttctcccc cctctgattg gctgttaata agctgcgaaa 60
 cttacgagta acaacacaat cagtatgatg acgagcttca tcataaccct tt 112

<210> 18
 <211> 139
 <212> DNA
 <213> E. Coli

<400> 18
 cagggcaata tctctcttgc aggtgaatgc aacgtcaagc gatgggcggt gcgctccata 60
 ttgtcttact tccttttttg aattactgca tagcacaatt gattcgtacg acgccgactt 120
 tgatgagtcg gcttttttt 139

<210> 19
 <211> 155
 <212> DNA
 <213> E. Coli

<400> 19
 tagagtaaag gaacaagggt aagggaggat ttctcccccc tctgattggc tgtaataaag 60
 ctgcgaaact tacgagtaac aacacaatca gtatgatgac gagcttcatc ataacccttt 120
 ccttctgtaa ggcccccttc ttcgggaggg gcttt 155

<210> 20
 <211> 128
 <212> DNA
 <213> E. Coli

<400> 20
 cataggggca atgataaaag gtggcaaaaa tgaatgtttc cagtagaact gtagtactga 60
 taaatttctt tgctgctggt ggtttgttta ctcttatctc tatgagattt ggctgggtta 120
 tttgatgt 128

<210> 21
 <211> 31
 <212> PRT
 <213> E. Coli

<400> 21
 Met Asn Val Ser Ser Arg Thr Val Val Leu Ile Asn Phe Phe Ala Ala
 1 5 10 15

Val Gly Leu Phe Thr Leu Ile Ser Met Arg Phe Gly Trp Phe Ile
 20 25 30

<210> 22
 <211> 84
 <212> DNA
 <213> E. Coli

<400> 22
 ataattataa gagaggttgt tatgattgaa cgtgaactgg ggaactggaa agactttatc 60
 gaagttatgc ttcgtaagta attc 84

<210> 23
 <211> 19
 <212> PRT
 <213> E. Coli

<400> 23
 Met Ile Glu Arg Glu Leu Gly Asn Trp Lys Asp Phe Ile Glu Val Met
 1 5 10 15
 Leu Arg Lys

<210> 24
 <211> 180
 <212> DNA
 <213> E. Coli

<400> 24
 aaaggagacg cttatgtttc gttggggcat catatttctg gttatcgcggt taatcgccgc 60
 cgcaacttggg tttggtgggc tggccggtac cgctgcaggc gcagctaaaa ttgtctttgt 120
 cgctcgggatt attctgttcc tgggtgagttt gttcatgggc cgaaaacgac cctagatttc 180

<210> 25
 <211> 53
 <212> PRT
 <213> E. Coli

<400> 25
 Met Phe Arg Trp Gly Ile Ile Phe Leu Val Ile Ala Leu Ile Ala Ala
 1 5 10 15
 Ala Leu Gly Phe Gly Gly Leu Ala Gly Thr Ala Ala Gly Ala Ala Lys
 20 25 30
 Ile Val Phe Val Val Gly Ile Ile Leu Phe Leu Val Ser Leu Phe Met
 35 40 45
 Gly Arg Lys Arg Pro
 50

<210> 26
 <211> 226
 <212> DNA
 <213> E. Coli

<400> 26

atacggagat atcatcatgg gcaaattagg tgaaaacggt cgcgttctta tcgataaagc 60
 cgtagatttc atggcatcaa gccaggcggt ccgggagtat ctgaaaaaac ttcctccccg 120
 taacgcgatt ccgtccggaa taccgatga aagcgtgccg ttatatctac aacgtctgga 180
 gtattatcgt cggctttatc ggccgaagca ggtagagggg cagtaa 226

<210> 27
 <211> 69
 <212> PRT
 <213> E. Coli

<400> 27
 Met Gly Lys Leu Gly Glu Asn Val Pro Leu Leu Ile Asp Lys Ala Val
 1 5 10 15
 Asp Phe Met Ala Ser Ser Gln Ala Phe Arg Glu Tyr Leu Lys Lys Leu
 20 25 30
 Pro Pro Arg Asn Ala Ile Pro Ser Gly Ile Pro Asp Glu Ser Val Pro
 35 40 45
 Leu Tyr Leu Gln Arg Leu Glu Tyr Tyr Arg Arg Leu Tyr Arg Pro Lys
 50 55 60
 Gln Val Glu Gly Gln
 65

<210> 28
 <211> 189
 <212> DNA
 <213> E. Coli

<400> 28
 gagtagttaa catgaagcgg agtagaacgg aagtggggcg ctggcgcatg cagcgtcagg 60
 ctagccgacg taaatcgct tggcttgagg ggcaatcgcg ccgaaatatg cgtatccaca 120
 gcatcaggaa gtgcattcta aacaaacagc gtaactcggt attgtttgcg atctacaata 180
 tctaaatgt 189

<210> 29
 <211> 57
 <212> PRT
 <213> E. Coli

<400> 29
 Met Lys Arg Ser Arg Thr Glu Val Gly Arg Trp Arg Met Gln Arg Gln
 1 5 10 15
 Ala Ser Arg Arg Lys Ser Arg Trp Leu Glu Gly Gln Ser Arg Arg Asn
 20 25 30
 Met Arg Ile His Ser Ile Arg Lys Cys Ile Leu Asn Lys Gln Arg Asn
 35 40 45
 Ser Leu Leu Phe Ala Ile Tyr Asn Ile
 50 55

<210> 30
 <211> 117
 <212> DNA
 <213> E. Coli

<400> 30
 aacggaggca aataatgctg ggtaatatga atgtttttat ggccgtactg ggaataattt 60
 tattttctgg ttttctggcc gcgtattttca gccacaaatg ggatgactaa tgaacgg 117

<210> 31
 <211> 31
 <212> PRT
 <213> E. Coli

<400> 31
 Met Leu Gly Asn Met Asn Val Phe Met Ala Val Leu Gly Ile Ile Leu
 1 5 10 15
 Phe Ser Gly Phe Leu Ala Ala Tyr Phe Ser His Lys Trp Asp Asp
 20 25 30

<210> 32
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 32
 gcgcctcgtt atcatccaaa atacg 25

<210> 33
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 33
 gtcgccagc caatgctttc agtcg 25

<210> 34
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 34
 attgatcgca cacctgacag ctgcc 25

<210> 35
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 35
 gttgtcacc tggacctggt cgtac 25

<210> 36

<211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 36
 tgaccgcgat ttgcacaaaa tgc 23

<210> 37
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 37
 actcttaaatt ttcctatcaa aactcgc 27

<210> 38
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 38
 ggtattttca gagattatga attgccg 27

<210> 39
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 39
 tcacctctcc ttcgagcgct actgg 25

<210> 40
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

<400> 40
 aatgctctcc tgataatggt aaactt 26

<210> 41
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>	
<223> Oligonucleotide	
<400> 41	
ggttagctcc gaagcaaaag ccggat	26
<210> 42	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 42	
taattccttt caaatgaaac ggagc	25
<210> 43	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 43	
ggactccctc attataatta ctgg	24
<210> 44	
<211> 27	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 44	
ctccttaaac aaggacatta gtctacg	27
<210> 45	
<211> 27	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 45	
attcacctta cctaatttga ttcttcc	27
<210> 46	
<211> 27	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	

<400> 46	
ccatcgcttg acgttgcatc cacctgc	27
<210> 47	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 47	
gtcggcgctcg tacgaatcaa ttgtgc	26
<210> 48	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 48	
gcacaattga ttcgtacgac gccgac	26
<210> 49	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 49	
taaggataat attgcagatc gtaag	25
<210> 50	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 50	
atcatcaaac agcaacttgc cc	22
<210> 51	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 51	
tgtccttctc ctgcaagaga attatt	26

<210> 52
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 52
 gctaataata atgtcttttt cgctcc 26

 <210> 53
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 53
 gcttttgtga attaatttgt atatcgaagc g 31

 <210> 54
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 54
 tattaataacc ctctagattg agttaatc 28

 <210> 55
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 55
 cgatttacct cacttcatcg ctttcag 27

 <210> 56
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 56
 tgatcctgac ttaatgccgc aagttc 26

 <210> 57
 <211> 39

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 57
 gcttatctcc ggcactctca gtggcttagc tcttgaagg 39

 <210> 58
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 58
 ttgctcacat ctcaactttaa tcgtgctc 28

 <210> 59
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 59
 atattccacc agctatttgt tagtgaataa aagg 34

 <210> 60
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 60
 tgattaattt cgattatttt tcccgatgg 30

 <210> 61
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 61
 attagaaaca ggaagcccct cagtcgag 28

 <210> 62
 <211> 30
 <212> DNA
 <213> Artificial Sequence

```

<220>
<223> Oligonucleotide

<400> 62
ttattttccc cggaagcaca ttcacttcac 30

<210> 63
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 63
tgatctattg cacaacgagg aagc 24

<210> 64
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 64
tgcttactca tcaaaagtag cgccagattc 30

<210> 65
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 65
taatcgacgg acgatagata attcctg 27

<210> 66
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 66
ccaatgtgtc gcctttttca actttccg 28

<210> 67
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

```

<400> 67 cgatttatga gaataaatac tcatttaagg gtg	33
<210> 68 <211> 25 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 68 aaatccgact ttagttacaa catac	25
<210> 69 <211> 26 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 69 gaccagacct tcttgatgat gggcac	26
<210> 70 <211> 24 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 70 cgacctcaat tccacgggat ctgg	24
<210> 71 <211> 25 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 71 atttagctgt agtaatcact cgccg	25
<210> 72 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 72 ggtctcctta gcgccttatt gcg	23

<210> 73
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 73
 cgccacatg ctgttcttat tattccc 27

 <210> 74
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 74
 tttatgacac ctgccactgc cgtc 24

 <210> 75
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 75
 ctgtcaagtt atctgtttgt taagtcaagc 30

 <210> 76
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 76
 gctgtgaagc acctgcgttg ctcatg 26

 <210> 77
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 77
 gctgtgaaac acctgcattt acggccacgg 30

 <210> 78
 <211> 30
 <212> DNA

```

<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 78
ccgtggccgt aaatgcaggt gtttcacagc
30

<210> 79
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 79
cctttcgcaa ttgactgaaa cac
23

<210> 80
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 80
ggctagaccg gggtagcgcg
19

<210> 81
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 81
aaggtggtta ttacacctt agcg
24

<210> 82
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 82
gtcctctttg gggtaaattgt c
21

<210> 83
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

```



```

<223> Oligonucleotide

<400> 83
aatgctccgg ttcatgtca tc                                22

<210> 84
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 84
tagttccttc tcacccggag                                20

<210> 85
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 85
cacaagggcg ctttagtttg ttttccg                        27

<210> 86
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 86
atcccctgag agtttaattt tcgtcaag                        28

<210> 87
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 87
taattcgtcg taattcgtcc tcc                            23

<210> 88
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 88

```

ctctgccttc ctgtttttgt tgtg	24
<210> 89	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 89	
aaacgcattt gcaactgtcg gcgcttttcc	30
<210> 90	
<211> 29	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 90	
cttgttacct caaaaaatca cagtgtctcg	29
<210> 91	
<211> 27	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 91	
gcagtcggtg atgctggatt tgccctg	27
<210> 92	
<211> 32	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 92	
gttttttttac gggtaagccg caacgaccat tg	32
<210> 93	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 93	
tagtagataa gtttttagata ac	22
<210> 94	

<211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 94
 taaaactgaa gttgccctga aaatg 25

 <210> 95
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 95
 tgatgagtgg ttctgcaaga gg 22

 <210> 96
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 96
 taaaagacag attacctggc ctg 23

 <210> 97
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 97
 cgactacct caaaataaag ctttatatac g 31

 <210> 98
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 98
 gtcatgatac cttgattaaa aaacaaacag c 31

 <210> 99
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide

 <400> 99
 ggctataatg cgcacataac ctcttg 26

 <210> 100
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 100
 aatcttttct tatttttttg ctaacgaata gcc 33

 <210> 101
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 101
 gtccaacttt ttggggtcag taaaaacttt g 31

 <210> 102
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 102
 taataacgcc gttattaaat agcctgcc 28

 <210> 103
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 103
 taagcaacgt ctgcttactg cccctc 26

 <210> 104
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

<400> 104 gtgatggctt ctgataaaga taaatttata gcc	33
<210> 105 <211> 18 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 105 taacaggcta agaggggc	18
<210> 106 <211> 28 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 106 attgccactc ttcttgatca aataaccg	28
<210> 107 <211> 29 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 107 aatgcgtctg ttgataattc aaattagtc	29
<210> 108 <211> 28 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 108 tagccgtttt attcagtata gatttgcg	28
<210> 109 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 109 gttcgtcggc aaccggtttc agc	23

```

<210> 110
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 110
atggcttaaa gagaggtgcc                20

<210> 111
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 111
cgtactttaa agggagaatg ac            22

<210> 112
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 112
gtgcttcctc attatgggtga cg          22

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 113
gaatggaggg agattacacg              20

<210> 114
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 114
ccttagtggg taaacgctta c            21

<210> 115
<211> 21

```

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 115
 ctttcaggca gctaaggaaa g 21

 <210> 116
 <211> 29
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 116
 caatatgtat tattgattga gtaaacggg 29

 <210> 117
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 117
 cctcttccag gaataatccc 20

 <210> 118
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 118
 cggaagcgg ttcacagatc 20

 <210> 119
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 119
 ctcgtaagtt tcgcagctta tta 23

 <210> 120
 <211> 20
 <212> DNA
 <213> Artificial Sequence

```

<220>
<223> Oligonucleotide

<400> 120
tgaaattcct gtccgacagg                20

<210> 121
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 121
gcactaccgc aatgttattg c                21

<210> 122
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 122
gcttacccaa taaatagtta cacg            24

<210> 123
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 123
taaaacctgt cacaaatcac aaa            23

<210> 124
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 124
gtggcctgct tcaaactttc g                21

<210> 125
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

```


<400> 125 gtaaagtcta gcctggcggt tcg	23
<210> 126 <211> 31 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 126 taattctggt acgcctggca gatattttgc c	31
<210> 127 <211> 24 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 127 atcaacctca aaagggaaat cggg	24
<210> 128 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 128 taacttggtg taagccggat cg	23
<210> 129 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 129 tgaagcatct atcgccggtt gcg	23
<210> 130 <211> 28 <212> DNA <213> Artificial Sequence	
<220> <223> Oligonucleotide	
<400> 130 gattagaaat ccttttgaaa gcgcattg	28

```

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 131
cttattgggc accgcaatgg                20

<210> 132
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 132
cgaacacaat aaagatttaa ttcagcc        27

<210> 133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 133
ctgatgctac tgtgtcaacg                20

<210> 134
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 134
aataatcaga catagcttag gc             22

<210> 135
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 135
gccgtgatgg ttttcgcggt c             21

<210> 136
<211> 21
<212> DNA

```

```

<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 136
tattttcctc ccgcgctaaa g                21

<210> 137
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 137
ttcagctgat gaccaccacg ctt                23

<210> 138
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 138
gagttgtcag agcaggatga ttc                23

<210> 139
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 139
tatctgcgct tatcctttat gg                22

<210> 140
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 140
cctttacggt gataaccgtc gcg                23

<210> 141
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

```

<223> Oligonucleotide

<400> 141
ctgacaagcc tctcattctc ttgtc 25

<210> 142
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 142
gagaattatc gaggtccggt atc 23

<210> 143
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 143
ctacgcgtta gcgatagact gc 22

<210> 144
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 144
aggcttacta agaacaccag ggggagggga a 31

<210> 145
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 145
agtcataagc ttccccgctt actaagacta 30

<210> 146
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 146

cctcaaatcg gccataataa cc	22
<210> 147	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 147	
taaacaccgt cgtcagaaat gc	22
<210> 148	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 148	
tagacttttta tccactttat tgctg	25
<210> 149	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 149	
gtgtgccttt cggcgatatg gcgtg	25
<210> 150	
<211> 25	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 150	
cctttacgtg ggcggtgatt ttgtc	25
<210> 151	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Oligonucleotide	
<400> 151	
tagctttgct cctggatggt tgcc	24
<210> 152	

```

<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 152
gctgtaattt attcagcggtt tgtacatacg          30
      •
<210> 153
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 153
tcagtcaact cgctgcggcg tggtac          26

<210> 154
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 154
cttattgttg cttagttagg gtagtcac          28

<210> 155
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 155
cagtcagtct caggggagga gcaatc          26

<210> 156
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 156
tgaatgcaca ataaaaaat cccgaccctg          30

<210> 157
<211> 25
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Oligonucleotide

<400> 157
agtcgcgcag tactcctctt accag                25

<210> 158
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 158
taattttctca tcaggcggct ctgc                24

<210> 159
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 159
taacattatc agcctgctga cggc                24

<210> 160
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 160
ggccgaattc gtaggtaca gaggtaag            28

<210> 161
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 161
ggccgatcc gtcattactg actggggcg          30

```